CORNELL UNIVERSITY
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Volume XXIII Number 9

Announcement of the College of Architecture for 1932-33

Architecture
Landscape Architecture
Painting
Sculpture

Ithaca, New York
Published by the University
December 15, 1931

	1932		FIRST TERM
Sept.	19, *Monday*,	Entrance examinations begin.	
Sept.	26, *Monday*,	Registration and assignment of new students.	
Sept.	27, *Tuesday*,		
Sept.	27, *Tuesday*,	Registration and assignment of old students.	
Sept.	28, *Wednesday*,		
Sept.	29, *Thursday*,	Instruction begins at 8 A. M.	
Oct.	21, *Friday*,	Last day for payment of tuition for the first term.	
Nov.	23, *Wednesday*,	Instruction ends at 6 P. M.	Thanksgiving Recess
Nov.	28, *Monday*,	Instruction resumed at 8 A.M.	
Dec.	17, *Saturday*,	Instruction ends at 1 P. M.	Christmas Recess
	1933		
Jan.	2, *Monday*,	Instruction resumed at 8 A.M.	
Jan.	11, *Wednesday*,	Founder's Day.	
Jan.	28, *Saturday*,	Instruction ends.	
Jan.	30, *Monday*,	Term examinations begin.	
Feb.	8, *Wednesday*,	Term ends.	
Feb.	9, *Thursday*,	A holiday.	
		SECOND TERM	
Feb.	10, *Friday*,	Registration of all students.	
Feb.	13, *Monday*,	Instruction begins at 8 A. M.	
Mar.	6, *Monday*,	Last day for payment of tuition for the second term.	
April	1, *Saturday*,	Instruction ends at 1 P. M.	Spring Recess
April	10, *Monday*,	Instruction resumed, 8 A. M.	
May	27, *Saturday*,	Spring Day: a holiday.	
June	5, *Monday*,	Term examinations begin.	
June	13, *Tuesday*,	End of term examinations.	
June	19, *Monday*,	COMMENCEMENT.	

THE COLLEGE OF ARCHITECTURE

THE FACULTY

LIVINGSTON FARRAND, A.B., M.D., L.H.D., LL.D., President of the University.
ALBERT RUSSELL MANN, B.S.A., A.M., D.Sc., D.Agr., LL.D., Provost of the University.
GEORGE YOUNG, JR., B.Arch., Dean and Professor of Architecture.
OLAF MARTINIUS BRAUNER, Professor of Drawing and Painting.
ALBERT CHARLES PHELPS, B.S., M.Arch., World War Memorial Professor of Architecture.
FRANCKE HUNTINGTON BOSWORTH, A.B., Andrew Dickson White Professor of Architecture.
CHRISTIAN MIDJO, Professor of Freehand Drawing and Modeling.
RALPH WRIGHT CURTIS, M.S.H., Professor of Ornamental Horticulture.
LEROY P. BURNHAM, M.S.Arch., Professor of Design.
ALEXANDER DUNCAN SEYMOUR, B.S.Arch., Professor of Architecture.
EUGENE DAVIS MONTILLON, B.Arch., Assistant Professor of Landscape Architecture.
HUBERT E. BAXTER, B.Arch., Assistant Professor of Architecture.
WALTER KING STONE, Assistant Professor of Drawing.
WILLIAM MCLEISH DUNBAR, B.Arch., Assistant Professor of Architecture.
EDWARD LAWSON, B.S., M.L.D., F.A.A.R., Assistant Professor of Landscape Architecture.
WALTER A. J. EWALD, B.S., Acting Assistant Professor of Landscape Architecture.
DONALD LORD FINLAYSON, M.A., Assistant Professor of Architecture.
HARRY P. CAMDEN, B.F.A., F.A.A.R., Assistant Professor of Sculpture and Drawing.
JOHN A. HARTELL, B.Arch., Assistant Professor of Architecture.
EDWARD ABBUEHL, M.Arch., Assistant Professor of Architecture.
JOHN N. TILTON, JR., M.Arch., Assistant Professor of Architecture.
KENNETH L. WASHBURN, M.F.A., Instructor in Freehand Drawing.
CHARLES L. GOELLER, Instructor in Drawing.
THADDEUS B. HURD, M.Arch., Instructor in Design.
REBECCA S. HARRIS, A.B., Librarian.
MRS. E. G. DAVIS, Assistant Librarian.
MILDRED E. VAN ALSTYNE, Secretary to the Dean.

ALUMNI ADVISORY COUNCIL IN LANDSCAPE ARCHITECTURE

BRYANT FLEMING, B.S., '01.
GILMORE D. CLARKE, B.S., '13.

GENERAL STATEMENT

THE COURSES OF STUDY

The College of Architecture is a professional school offering courses of study designed as basic training preparatory to the practice of the professions of

Architecture,
Landscape Architecture,
Painting or Sculpture.

The course leading to the degree of Bachelor of Architecture is intended for the student who expects to practice architecture. In addition to the regular curriculum leading to this degree, a course is available for the student who expects to specialize more particularly in the structural phase of architecture or engage in building or in the manufacture of building materials. The course leading to the degree of Bachelor of Landscape Architecture is intended for the student who expects to practice Landscape Architecture. The courses in Architecture and Landscape Architecture are practically identical throughout the first two years. The course leading to the degree of Bachelor of Fine Arts is intended for the prospective painter or sculptor or for one who expects to engage in the practice of one of the decorative arts. (See also page 10).

The number of students in the college is limited in order to insure, throughout the course, that close personal association between teacher and pupil which is necessary for effective instruction in any creative art. The several curricula are composed largely of courses technical in nature. In these the work is competitive, the standard of scholarship being maintained upon a professional basis. Included in these curricula is such an amount of general academic work, courses taught in other departments of the University, as would seem to furnish the minimum essential cultural background. It is inadvisable for anyone not vitally interested to attempt the work of any of these courses of study.

The course leading to any one of the three degrees granted by the college requires, normally five years of work. It is possible, however, for a thoroughly prepared student to qualify for a degree in less time. In order to do so, it is necessary to present for entrance both Advanced Algebra and Trigonometry, as well as both Physics and Chemistry, inasmuch as these subjects, if not presented for entrance, must be taken in the University. Students presenting these subjects for entrance are not required to repeat them. The rate of a student's progress in the college is determined in large part by the quality of his work and not alone by the quantity of it. The amount of work that a student is permitted to carry each term is dependent upon the excellence of his scholastic record, hence the actual time required for the completion of the course will depend upon his ability as indicated

by that record. The time element in the preparation for any creative profession is such, however, that crowding of the work is deemed unwise.

BUILDINGS AND EQUIPMENT

The College of Architecture occupies the third and fourth floors and a portion of the basement of White Hall, the top floor of Franklin Hall, and parts of Morse Hall. The college offices, the college library, the lecture room and exhibition rooms occupy the third floor of White Hall. A suite of three drafting rooms, opening together so as to form virtually a single room 45 x 156 feet in dimension, occupies the entire fourth floor. On the top floor of Franklin Hall and in Morse Hall are well-lighted studios devoted to the work in freehand drawing, painting, and modeling.

The college library is one of the best in the country, and the student is permitted and encouraged to use the books, photographs, and drawings freely.

A carefully selected collection of about 24,000 lantern slides is used constantly in connection with the lectures upon history, theory, and construction.

The College of Architecture also maintains an Art Gallery in Morse Hall, having 230 lineal feet of wall for the temporary exhibition of paintings, etchings and other prints, architectural drawings and photographs and examples of various types of applied art, such as textiles, ceramics, and wrought iron. It is the aim of the college to bring to all students of the university the benefits of contact with the work of eminent artists, architects, and artisans.

In the Exhibition rooms in White Hall are shown current student work in design, painting, and drawing.

ADMISSION TO THE COLLEGE

The requirements and rules of admission will be found in the General Information Number.

Prospective students should address the Director of Admissions, Cornell University, Ithaca, N. Y., requesting the forms to be used in making application for admission.

No application for admission in September will be received after June 1. For admission in February no application will be received after January 1.

ADMISSION TO THE FRESHMAN CLASS

Admission to the freshman class is permitted at the beginning of the first term only.

ADMISSION TO ADVANCED STANDING

A student who has already attended a technical school or other institution of collegiate rank may be admitted at the beginning of the

first or, if a satisfactory schedule of work can be arranged, at the beginning of the second term. Such an applicant is required to fulfill all academic and other entrance requirements.

In addition he should file with the Director of Admissions of the University an official transcript of record of his work at the institution already attended together with a certificate of honorable dismissal therefrom. He should also send a catalogue of the institution, writing his name thereon, and marking the courses which he has taken as listed in the official transcript.

Advanced credit for courses in the College of Architecture is given only upon examination by the department concerned but a preliminary ruling will be made by the Committee on Admissions on the evidence submitted.

ADMISSION OF SPECIAL STUDENTS

Special students are primarily those of advanced experience in the practice of their art. They must be at least twenty-one years of age, and must have had a high school training or its equivalent, including a working knowledge of plane geometry and solid geometry and, in the case of architects, of algebra through quadratic equations. They should have at least three years' practical experience or its equivalent and submit with their application examples of their work or draftsmanship. Special students may be admitted at the beginning of either term, but applications should be filed by June 1, or January 1. See also the General Information Number for requirements concerning registration fee and vaccination certificate. A high scholastic performance is expected of special students and is made a condition of their remaining enrolled in the college. The college does not issue a certificate for special work.

Special Students in Fine Arts are admitted only on evidence of ability in drawing, painting, or modeling of such outstanding quality as to set a standard for the regular students. Each application will be considered on its merits but the applicant must present evidence to show, first, qualifications and proved ability to do advanced work in some branch of the fine arts; and second, general academic training preferably equivalent to graduation from an institution of collegiate rank but in no case less than the equivalent of graduation from an approved high school. If admitted on the lesser requirement the student will be expected to take, in addition to drawing, painting, etc., such general work as the Faculty may prescribe.

ADMISSION AS A GRADUATE STUDENT

All correspondence relating to graduate work should be addressed to the Dean of the Graduate School.

In all departments of the College of Architecture work is arranged to meet the special needs of graduate students. Candidates for advanced degrees in architecture or in landscape architecture must be graduates of schools of equal standing with the College of Architec-

ture, and their training in design or other subjects elected for graduate study must be equivalent to the training required in the same subjects by the College of Architecture for the degree of Bachelor of Architecture or for the degree of Bachelor of Landscape Architecture.

For a statement of conditions governing work leading to an advanced degree in Fine Arts, see the announcement of the Graduate School.

TUITION AND OTHER FEES

Information regarding tuition and other fees, and regarding the expenses of living in Ithaca, will be found in the General Information Number.

FELLOWSHIPS: SCHOLARSHIPS: PRIZES

For information concerning scholarships that are open to students of this college in common with other students of the University, consult the General Information Number.

A University Fellowship of the value of $400 with free tuition is awarded annually for graduate study in Architecture or Landscape Architecture.

The Charles Goodwin Sands Memorial Medal, founded in 1900 by the family of Charles Goodwin Sands of the class of '90, is awarded for work of exceptional merit in any of the advanced courses in the College of Architecture. Two grades of medals are recognized, the silver medal and the bronze medal. Awards for the year 1930–31: Second Medals, Sammie A. Abbott, Ludlow D. Brown, L. Alexander Hatton, Shigeo Hirata, Malcolm C. Mattice, Ralph H. Parks, Frederick W. Short, Martin Van Apeldoorn, Arlene J. VanDerhoef, Robert A. Wilson.

The Clifton Beckwith Brown Memorial Medal was established in 1901 by John Harkness Brown in memory of his brother Clifton Beckwith Brown, killed on the field of battle at San Juan Hill. A silver replica is awarded to the senior in the College of Architecture attaining the highest standing in design during his senior year, and a bronze replica to the senior taking second place. These medals are not awarded, however, solely for order of merit, the award being withheld unless the standard reached in design is considerably higher than that required for the graduation. Awards for the year 1930–31: First Medal, Shigeo Hirata.

The Student Medal of the American Institute of Architects is awarded to the member of the graduating class in architecture whose record is the best throughout the entire course. Award for the year (1930–31: First, Shigeo Hirata; Second, E. M. Tourtelot, jr.

Through the Beaux-Arts Institute of Design numerous prizes are offered for excellence of work in design. These prizes are open to students in the College of Architecture who frequently compete for them with success and distinction to themselves and to the college.

The Fuertes Memorial Prizes in Public Speaking were founded in 1912 by Charles L. Baker, a graduate of the School of Civil Engineering of the class of 1886. Three prizes, one of $125, one of $35 and one of $20, are awarded annually to members of the junior and senior classes in the Colleges of Engineering and Architecture for proficiency in public speaking. Award for the year 1931–32: First Prize, John S. Townsend.

The Paul Dickinson Prize, established in 1927 by Miss Dorothea C. Dickinson, '23, in memory of her father, consists of the income of a fund of $500 and is awarded to the student in the first-year class of the College of Architecture whose general record is the best. Award for the year 1930–31, H. Roger Williams.

The Baird Prizes are offered, one of $35 and one of $15, as first and second awards in a special sketch problem competition for Juniors and Seniors in the College of Architecture. The problem, lasting six days, is given during the early part of the second term and is of a decorative nature. Established in 1927, the gift of Mrs. M. Z. Baird, the income (or, in the discretion of the Faculty of the College of Architecture, the principal) to be used for the purposes of that college; designated as a prize fund by the Faculty of that College in 1927. Awards for the year 1931–32: First Prize, E. Stewart Williams; Second Prize, Paul Revere Henkel.

The Shreve, Lamb and Harmon Professional Fellowship. This fellowship is awarded annually by the Faculty of the College of Architecture. It is open to any student on completion of his course in that College.

The purpose of this Fellowship is to provide better than usual conditions under which a student may make the transition between school work and practice.

The student to whom this Fellowship is awarded becomes a member of the staff of Shreve, Lamb and Harmon, Architects, New York City, for the term of one year or as otherwise arranged. During this year he will be given such work as is best calculated to advance his special ability, aptitude or interest and he will be encouraged to study the office work as he did his student work. He will be paid a salary sufficient to enable him to live decently and comfortably in or near the city of New York. Award in the year 1931: Edward M. Tourtelot, jr.

The Edward Palmer York Memorial Prizes in Sophomore Design are given for the best solution of the last one day sketch problem of each term.

The prizes of $25 each, are from the income of a gift of Mrs. Edward Palmer York in memory of her husband who graduated from the College of Architecture with the class of 1889.

SUMMER SESSION

Courses in Architectural Design, Drawing, Painting, and History of Art are offered in the Summer Session. For details of these courses see the Announcement of the Summer Session.

CITY PLANNING LECTURES

For the year 1931–32 a special series of lectures on city and regional planning was given by non-resident lecturers. This series will be repeated from time to time. The lectures for 1931–32 were as follows:

I. THE SOVIET PROGRAM

1.—*The Planning and Construction Program of the Russian Soviet Government.* By Jacob L. Crane, jr., Consulting Engineer, Chicago.

II. THE METROPOLITAN AREA OF NEW YORK

A series of six lectures on the Problem of Circulation, given by courtesy of The Committee on the Regional Plan of New York and Its Environs and the Port of New York Authority.

2.—*A General View of the Problem of Circulation in the New York Region and Its Handling by the Regional Plan.* By Flavel Shurtleff, Secretary National Conference on City Planning.

3.—*The Highways of New York.* By Harold M. Lewis, Engineer to the Committee on the Regional Plan.

4.—*Circulation in Relation to Land Distribution and Uses.* By Wayne D. Heydecker, Secretary of the Regional Plan Association of New York.

5.—*Transportation and Rapid Transit in the New York Region.* By George McAneny, LL.D., President of the Regional Plan Association.

6.—*The Port of New York Authority, Its Organization and Functions: the Planning and Execution of Port Improvements.* By Walter P. Hedden, Chief of the Bureau of Commerce of the Port Authority.

7.—*The George Washington Bridge, Its Function in the Regional Plan; the Design of the Bridge as an Engineering Structure.* By Othmar H. Ammann, C. E., Chief Engineer of Bridges, Port of New York Authority, and Designer of the George Washington Bridge.

COURSES OF STUDY

I. The Course Leading to the Degree of BACHELOR OF ARCHITECTURE.

This course is designed for the student who expects to become a practicing architect.

II. A Course Leading to the Degree of BACHELOR OF ARCHITECTURE and Related Especially to CONSTRUCTION.

This course is designed for the student who plans to engage particularly in the structural field of architectural practice or who wishes to prepare himself for the business of contractor or of manufacturer of building materials.

III. The Course Leading to the Degree of BACHELOR OF FINE ARTS.

This course is designed for the student who expects to become a painter or sculptor but who is also desirous of a general education such as can be obtained in a large University. It should be noted that about thirty per cent of the work in this course is non-technical.

IV. The Course Leading to the Degree of BACHELOR OF LANDSCAPE ARCHITECTURE.

This course is designed for the student who expects to become a practicing landscape architect.

SEQUENCE OF COURSES LEADING TO DEGREES

The schedules on the next four pages show the normal sequence of the courses of instruction that lead to the several degrees. In order to become eligible to the degree corresponding to any one of the four courses of study, the student must complete the required work in Hygiene and Military Drill (or Physical Training; see the General Information Number) and the courses of instruction that are comprised in that curriculum. Normally any of these courses of study requires five years for completion.

ELECTIVES

In each of the courses offered, approximately one-fifth of the required work is elective. No restriction in the choice of electives is made except that each student before starting his elective work is required to file with the College office, his entire program of elective study, approved by some member of the Faculty.

INFORMAL STUDY

For a statement concerning Informal Study see page 24.

I. *The Course Leading to the Degree of* Bachelor of Architecture

Of these four subjects those which have not been presented for entrance must be taken in the University in addition to the work listed below:

Trigonometry (Mathematics, 3)	3
Advanced Algebra (Mathematics, 2)	3
Physics (Physics, 3 and 4)	6
Chemistry (Chemistry 101 and 105)	6

The following curriculum shows the total of 150 hours and Hygiene required for the degree. A student should carry approximately sixteen hours each term except the last.

The necessary prerequisite sequence of courses is shown in the listing by groups. The usual association of subjects by terms and the opportunity for the inclusion of electives (not shown herein) is shown in the distribution by years.

	YEARS									
	1st		2nd		3rd		4th		5th	
Terms:	1	2	1	2	1	2	1	2	1	2
010 Theory of Architecture	1	0								
110 Elementary Design	3	3								
111 Sophomore Design			4	4						
112 Junior Design					5	5				
113 Senior Design							9	9	9	0
114 Architectural Thesis									0	6
Math. 8 Analytics and Calculus			3	3						
210 Mechanics of Materials					3	3				
211 Structural Design							3	0		
C. E. 280 Concrete Construction							0	3		
C. E. 227 Testing Materials							1	0		
310 Elementary Drawing	3	3								
311 Life and Antique			3	3						
312 Elements of Color			2	0						
313 Modeling			0	2						
410 History of Architecture	3	0								
411 History of Architecture	0	3								
412 History of Architecture			3	0						
510 Descriptive Geometry	3	3								
511 Perspective			0	1						
610 Materials of Construction					5	0				
611 Working Drawings					0	5				
612 Heating and Plumbing					0	2				
English 1	3	3								
Hygiene 1–2	1	1								

Electives to a total of 21 hours.—Program of electives approved by Faculty Adviser to be filed at beginning of the second year.

II. *The Course Leading to the Degree of* BACHELOR OF ARCHITECTURE *and Related Especially to* CONSTRUCTION

Of these four subjects those which have not been presented for entrance must be taken in the University in addition to the work listed below:

Trigonometry (Mathematics, 3)	3
Advanced Algebra (Mathematics, 2)	3
Physics (Physics, 3 and 4)	6
Chemistry (Chemistry 101 and 105)	6

The following curriculum shows the total of 150 hours and Hygiene required for the degree. A student should carry approximately sixteen hours each term except the last.

The necessary prerequisite sequence of courses is shown in the listing by groups. The usual association of subjects by terms and the opportunity for inclusion of electives (not shown herein) is shown in the distribution by years.

	YEARS									
	1st		2nd		3rd		4th		5th	
Terms:	1	2	1	2	1	2	1	2	1	2
010 Theory of Architecture	1	0								
110 Elementary Design	3	3								
111 Sophomore Design			4	4						
112 Junior Design					5	5				
114 Architectural Thesis									0	6
Math. 8 Analytics and Calculus			3	3						
210 Mechanics of Materials					3	3				
C. E. 110 Surveying							3	0		
C. E. 225 Materials of Construction					3	0				
C. E. 226 Materials Laboratory							0	3		
C. E. 270 Structural Design							4	0		
C. E. 271 Structural Design							0	3		
C. E. 272 Higher Structures (or) C. E. 281 Foundations									3	0
C. E. 280 Concrete Construction							0	3		
C. E. 285 Reinforced Concrete Design (or C. E. 282)									3	0
310 Elementary Drawing	3	3								
311 Life and Antique			3	3						
312 Elements of Color			2	0						
313 Modeling			0	2						
410 History of Architecture	3	0								
411 History of Architecture	0	3								
412 History of Architecture			3	0						
510 Descriptive Geometry	3	3								
511 Perspective			0	1						
610 Materials of Construction					5	0				
611 Working Drawings					0	5				
English 1	3	3								
Hygiene 1–2	1	1								

Electives to a total of 32 hours.—Program of electives approved by Faculty Adviser to be filed at the beginning of the second year. At least 6 of the elective hours must be in Design.

III. *The Course Leading to the Degree of* Bachelor of Fine Arts

The following curriculum shows the total of 150 hours and Hygiene required for the degree. A student should carry approximately sixteen hours each term except the last.

The necessary prerequisite sequence of courses is shown in the listing by groups. The usual association of subjects by terms and the opportunity for the inclusion of electives (not shown herein) is shown in the distribution by years.

	YEARS									
	1st		2nd		3rd		4th		5th	
Terms:	1	2	1	2	1	2	1	2	1	2
010 Theory of Architecture	1	0								
110 Elementary Design	3	3								
310 Elementary Drawing	3	3								
311 Life and Antique			3	3						
312 Elements of Color			2	0						
313 Modeling			0	2						
334 Composition			3	3						
326 3rd Yr. Drawing or Modeling					4	4				
327 Still Life in Color					3	0				
328 Composition					3	3				
329 Composition							3	3		
330 4th Yr. Painting or Modeling							6	6		
331 5th Yr. Painting or Modeling									6	6
332 Composition									3	2
410 History of Architecture	3	0								
411 History of Architecture	0	3								
412 History of Architecture					3	0				
425 History of Painting and Sculpture			3	3						
470 Historic Ornament					0	3				
510 Descriptive Geometry	3	3								
511 Perspective			0	1						
512 Perspective					1	0				
Anatomy 24			3	3						
English 1	3	3								
Hygiene 1–2	1	1								

Electives to a total of 29 hours.—Program of electives approved by Faculty Adviser to be filed at beginning of the second year.

IV. *The Course Leading to the Degree of* Bachelor of Landscape Architecture

Of these four subjects those which have not been presented for entrance must be taken in the University in addition to the work listed below:

Trigonometry (Mathematics, 3)	3
Advanced Algebra (Mathematics, 2)	3
Physics (Physics, 3 and 4)	6
Chemistry (Chemistry 101 and 105)	6

The following curriculum shows the total of 150 hours and Hygiene required for the degree. A student should carry approximately sixteen hours each term except the last.

The necessary prerequisite sequence of courses is shown in the listing by groups. The usual association of subjects by terms and the opportunity for the inclusion of electives (not shown herein) is shown in the distribution by years.

	YEARS									
	1st		2nd		S. S.	3rd		4th		5th	
Terms:	1	2	1	2		1	2	1	2	1	2
101 Theory of Architecture	1	0									
050 Theory of Landscape Architecture			0	1							
051 Theory of Landscape Architecture						1	0				
110 Elementary Design	3	3									
111 Sophomore Design			4	4							
150 Junior Landscape Design						4	4				
151 Senior Landscape Design								8	8	8	0
152 Landscape Thesis										0	6
Math. 8 Analytics and Calculus			3	3							
210 Mechanics of Materials						3	3				
310 Elementary Drawing	3	3									
311 Life and Antique			3	3							
410 History of Architecture	3	0									
411 History of Architecture	0	3									
412 History of Architecture			3	0							
450 History of Landscape Architecture						0	2				
510 Descriptive Geometry	3	3									
511 Perspective			0	1							
Hort. 8 Woody Plant Materials			0	3		3	0				
Hort. 8s Woody Plant Materials					4						
Hort. 6s Herbaceous Plant Materials					2						
650 Planting Design						0	2				
651 Planting Design								2	0		
C. E. 110 Elementary Surveying						3	0				
C. E. 296 Earthwork								0	2		
English 1	3	3									
Hygiene 1–2	1	1									

Electives to a total of 26 hours.—Program of electives approved by Faculty Adviser to be filed at beginning of the second year.

COURSES OF INSTRUCTION

GIVEN IN THE COLLEGE OF ARCHITECTURE

NOTE: *Courses which are open to election by students not registered in the College of Architecture are marked with an asterisk (*) preceding the number of the course. The number of students that can be accepted in any course is limited.*

Certain of the advanced courses in the department of Freehand Drawing and Fine Arts may be elected by specially qualified students with the personal permission of the Professor in charge of the course. *See pages 16 and 17.*

Students not registered in the College of Architecture are required to pay a fee of $5 a term for each course in Design, Drawing, or Modeling, except that when the student is registered for more than two such courses the total fee shall be $10.

THEORY OF ARCHITECTURE

*010. **Theory of Architecture.** First term. Credit one hour. Mr. HURD. Lectures, with sketches and essays by the class. M 8. White B 10.

*011. **Theory of Architecture.** Second term. Credit one hour. Prerequisite course 010. Mr. HURD. Lectures, with sketches and essays by the class. W 2. White 33.

012. **Advanced Theory Seminar, Elective.** First term. Credit one hour. Mr. BOSWORTH. Registration limited. Open to seniors and graduates. By appointment. Students planning to register for this course must obtain permission from Mr. BOSWORTH before registration day.

013. **Advanced Theory Seminar, Elective.** Second term. Credit one hour. Mr. SEYMOUR. Registration limited. Open to seniors and graduates. By appointment. Students planning to register for this course must obtain permission from Mr. SEYMOUR before registration day.

050. **Theory of Landscape Architecture.** Second term. Credit one hour. Mr. MONTILLON. To accompany the second term of Sophomore Design. Lectures, recitations and assigned reading. F 2:30. White 33.

051. **Theory of Landscape Architecture.** First term. Credit one hour. Mr. ————. Lectures, recitations and assigned reading. F 2:30. White 33.

*052. **Appreciation of Architecture.** First term. Credit two hours. Mr. BOSWORTH. Open to non-technical upperclass students. No ability in drawing required. An analytical and historical study of specific examples taken from the Classic to the Renaissance period. Lectures with assigned readings, essays, and examinations. T Th 2 p. m. Goldwin Smith 120.

070. **Landscape Seminar, Elective.** Second term. Credit one hour. Mr. EWALD. Open to seniors and graduates. By appointment.

DESIGN

Instruction in Landscape and Architectural Design is given by the Design Staff and consists of individual criticism over the drafting board. By appointment.

110. **Elementary Design.** Throughout the year. Credit three hours a term. Mr. HURD. Elementary composition, with drawings in pencil and ink, rendered in wash and color. Section A—M Tu W 1:40–4:00; Section B—Th F S 10:00–12:30.

111. **Sophomore Design.** Throughout the year. Credit four hours a term. Mr. HARTELL. Prerequisite course 110. A series of problems in architectural composition and planning.

112. **Junior Architectural Design.** Throughout the year. Credit five hours a term. Messrs. BOSWORTH, BURNHAM, and SEYMOUR. Prerequisite course 111. A series of problems in architectural composition and studies of detail. One problem each term is identical with that given in course 150.

113. **Senior Architectural Design.** Throughout three terms. Credit nine hours a term. Messrs. BOSWORTH, BURNHAM and SEYMOUR. Prerequisite course 112. This course is a prerequisite for the thesis.

114. **Architectural Thesis.** Credit six to ten hours. Prerequisite for the thesis, three terms of course 113 except for students in the Construction option who must have credit for course 112 and six elective hours in Design.

150. **Junior Landscape Design.** Throughout the year. Credit four hours each term. Messrs. MONTILLON and EWALD. Prerequisite course 111. A series of problems in landscape composition and studies of detail. One problem each term is identical with that given in course 112. Discussion period, Th 2:30.

151. **Senior Landscape Design.** Throughout three terms. Credit eight hours a term. Messrs. MONTILLON and EWALD. Prerequisite course 150. Discussion period, T 2:30 when no esquisse is scheduled.

152. **Landscape Thesis.** Credit six to ten hours. Prerequisite for beginning the thesis: Course 151.

170. **Architectural Rendering.** Second term. Credit three hours. Mr. BURNHAM. Prerequisite course 112. By appointment. Students who wish to take this course must register with Mr. BURNHAM on or before January 25.

*172. **Architectural and Engineering Problems.** Second term. Credit three hours. Mr. BOSWORTH. Open to upper class students of Engineering. A series of problems involving planning and elementary architectural composition. Monday, Wednesday, Friday at 2. White Hall B-7.

THEORY OF CONSTRUCTION

210. **Mechanics of Materials.** Throughout the year. Credit three hours each term. Messrs. YOUNG, BAXTER, and ABBUEHL. First term; a brief study of the principles of analytic and graphic statics. Recitations. Section A, M W F 9. Section B, T Th S 9.

Second term. The effects of loading in producing stress and deformation in beams, columns and masonry. Two recitations and one computing period. Section A, M W 9; Th 1:40–4. Section B, T Th 9, Th 1:40–4, White B 10.

211–212. **Structural Design.** First term. Credit three hours. Second term. Credit two hours. Prerequisite course 210. Messrs. YOUNG and BAXTER. The principles studied in course 210 are applied to the structural design of typical architectural problems. Lectures, computations, and reports. First term, M W F 1:40–4; second term, M W 1:40–4. White B 10. Course 211 is a prerequisite for Concrete 280.

225. **Construction.** (For Students in Landscape Architecture.) This requirement can be met by offering credit in course 211 or in C. E. 280 or 285 as may be approved in individual cases.

FREEHAND DRAWING AND FINE ARTS

(See Note, page 15)

310. **Elementary Drawing.** Throughout the year. Credit three hours a term. Messrs. WASHBURN and GOELLER. Elementary study of the presentation of form. This course embraces freehand perspective, outline and shaded drawing in pencil and charcoal from geometrical models and casts. Sec. A, M W F 10–12:30; Sec. B, T Th S 10–12:30. Franklin Hall 37.

311. **Life and Antique.** Throughout the year. Credit three hours a term. Prerequisite course 310. Messrs. BRAUNER, MIDJO, WASHBURN, and GOELLER. Drawing from the antique and from life. Sec. A, M W F 10–12:30; Sec. B, M W F 1:40–4. Franklin Hall 39. Sec. C, M W F 10–12:30. Morse Hall.

312. **Elements of Color.** First term. Credit two hours. Elementary color work from still life. Prerequisite course 310. Mr. STONE. Sec. A, M W 1:40–4; Sec. B, M W 10–12:30; Sec. C, Th S 10–12:30. Franklin 37.

313. **Modeling.** Second term. Credit two hours. Prerequisite course 310. Mr. CAMDEN. Modeling from the antique and from architectural ornament. Sec. A, M W 1:40–4; Sec. B, Th S 10–12:30. Morse Hall. See also course 373.

325. **Water Color.** Second term. Credit two hours. Prerequisite course 312. Mr. STONE. M W 1:40–4. Franklin Hall 37. By special arrangement other color media may be substituted for Water Color.

326. **Third Year Drawing or Modeling.** Throughout the year. Credit four hours each term. Prerequisite course 311. Messrs. MIDJO, BRAUNER, or CAMDEN. M T W Th 1:40–4. Criticism M W. Morse Hall.

327. **Still Life in Color.** First term. Credit three hours. Prerequisite courses 312 and 325. Mr. BRAUNER, or Mr. MIDJO. M W F 10–12:30. Criticism M W. Franklin Hall 37. Open only to candidates for B. F. A. degree.

334. **Sophomore Composition.** Throughout the year. Credit three hours each term. Mr. CAMDEN. Required of students in Fine Arts and open to restricted election by others. Prerequisite courses 110 and 310. A series of problems in decorative composition. Criticisms Friday at 3 and as arranged.

328. **Third Year Composition.** Throughout the year. Credit three hours each term. Mr. CAMDEN. A continuation of course 334 which is prerequisite. Criticisms Friday at 3 and as arranged.

329. **Fourth Year Composition.** Throughout the year. Credit three hours each term. A continuation of course 328. Criticisms as arranged.

330. **Fourth Year Painting or Modeling.** Throughout the year. Credit six hours each term. Prerequisite course 326. Mr. BRAUNER, Mr. MIDJO, or Mr. CAMDEN. Daily 10–12:30. Criticism M W F. Franklin Hall 38.

331. **Fifth Year Painting or Modeling.** Throughout the year. Credit six hours each term. Prerequisite course 330. Mr. BRAUNER, Mr. MIDJO, or Mr. CAMDEN. Daily 10–12:30. Criticism M W F. Franklin Hall 38.

332. **Composition.** First term, credit three hours. Second term, credit two hours. This course is given for the purpose of developing and applying the elementary laws of composition in free and pictorial art. Mr. MIDJO. By appointment.

*370. **Graphic Arts.** Second term. Credit two hours. Mr. STONE. Study of reproductive mediums; block printing, etching, etc. W 10–12:30, F 1:40–4. Franklin Hall 33.

*371. **Elementary Drawing.** Throughout the year. Credit three hours each term. Messrs. WASHBURN and GOELLER. Given primarily for students not registered in the College of Architecture. Elementary study of the presentation of form. This course embraces freehand perspective, outline and shaded drawing in pencil and charcoal from geometrical models and casts. The content of this course is the same as that of Course 310. M W F 1:40–4. Franklin Hall 37.

*372. **Elements of Color.** Second term. Credit two hours. Mr. STONE. Elementary color work from still life. Prerequisite course 310 or 371. M F 10–12:30. Franklin Hall 37.

*373. **Modeling.** First term. Credit two hours. Mr. CAMDEN. Modeling from the antique and from architectural ornament. Th S 10–12:30. Morse Hall.

HISTORY

*410. **History of Architecture.** First term. Credit three hours. Messrs. PHELPS and DUNBAR. Egyptian, Western Asiatic, Greek, Roman, Early Christian, and Byzantine architecture. Lectures with assigned readings, sketches, and examinations. T Th S 9. White 33.

*411. **History of Architecture.** Second term. Credit three hours. Prerequisite course 410. Messrs. PHELPS and DUNBAR. Mohammedan, Romanesque, and Gothic architecture. Lectures with assigned readings, sketches, and examinations. T Th S 9. White 33.

*412. **History of Architecture.** First term. Credit three hours. Prerequisite course 411. Messrs. PHELPS and DUNBAR. Architecture of the Renaissance and to the beginning of the nineteenth century in the principal European countries. Lectures with assigned readings, sketches, and examinations. M W F 9. White 33.

413. **Modern Architecture.** Second term. Credit three hours. Prerequisite course 412 and at least one term of Junior Design. Messrs. PHELPS and DUNBAR. Nineteenth century and more recent work in the principal European countries, and the architecture of the United States from the Colonial times to the present. M W F 10. White 33. Given in 1932–33.

*425. **History of Painting and Sculpture.** Throughout the year. Credit three hours each term. Special permission is required if the second term is taken before the first. Mr. FINLAYSON. A general survey of painting and sculpture. This course is a prerequisite for all other courses in the history of painting and sculpture, with the exception of 427. Registration limited to 50. M W F 2. White 33.

*426. **History of Northern Painting.** Throughout the year. Credit three hours a term. Mr. FINLAYSON. Painting in the Netherlands and in Germany, first term. Painting in France and England, second term. Either term may be elected without the other. Course 425 is a prerequisite. T Th S 11. White 33. Given in alternate years. Will be given in 1932–33.

*427. **Greek Sculpture and Italian Painting.** Throughout the year. Credit one hour each term. Mr. FINLAYSON. Designed primarily for students in the Technical Colleges of the University. Others will not be admitted except by special permission. Th 11. White 33. Given in alternate years. Will not be given in 1932–33.

*428. **Historical Studies in Mediaeval Art.** Throughout the year. Credit two hours each term. Mr. FINLAYSON. Some phase of Mediaeval art will be selected each term for more thorough consideration than is possible in the general survey course 425. Prerequisite course 425. T S 11. White 33. Given in alternate years. Will not be given in 1932–33.

*429, 430. **Historical Seminary in Painting and Sculpture.** Throughout the year. Credit two hours a term. Mr. FINLAYSON. Registration limited. Open to graduate students and qualified undergraduates. Ten hours of History of Art or their equivalent is prerequisite. By appointment. Students wishing to elect this course must register with Mr. FINLAYSON by the Monday before block week preceding the opening of the course. Exception will be made only in the case of graduate students entering the University in September.

*450. **History of Landscape Design.** Second term. Credit two hours. Mr. MONTILLON. Lectures, sketches and assigned reading. W F 10. White 33.

*470. **Historic Ornament.** Second term. Credit three hours. Prerequisite course 412. Mr. PHELPS. Some of the great historic styles of decoration will be analyzed and studied in detail, and the development of furniture, stained glass, and other minor arts will be briefly outlined. Lectures, sketches, and examinations. M W F 11. White 33. Students who wish to take this course must register with Mr. PHELPS on or before January 25th. Not given in 1932–33.

471, 472. **Historical Seminary in Architecture.** Throughout the year. Credit one hour a term. Mr. PHELPS. Investigation of assigned topics in the history of architecture: review of books and discussions of current periodical literature. For graduates and open to qualified upperclassmen by permission. By appointment.

GRAPHICS

*510. **Descriptive Geometry.** Throughout the year. Credit three hours each term. Messrs. BAXTER and ABBUEHL. The fundamental problems of descriptive geometry are studied and applied to the solution of problems in projection. Lectures and drawing. Sec. A, T Th S 10–12:30; Sec. B, M W F 10–12:30. White B. 10.

511. **Perspective.** Second term. Credit one hour. Prerequisite course 510. Mr. ————. A brief study of linear perspective with special reference to direct methods in the use of the perspective plan, proportional measurements, etc. Sec. A, Th 10–12:30. Sec. B, S 8–10:30. White 33.

512. **Perspective.** First term. Credit one hour. Prerequisite course 511. Mr. ————. A continuation of course 511 with more advanced study, including reflections, shadows, aerial perspective, sketching in perspective, etc. By appointment.

APPLIED CONSTRUCTION

610. **Building Materials and Construction.** First term. Credit five hours. Prerequisite 4 terms in the College of Architecture or the equivalent. Mr. ———— ————. A brief study of structural materials and details of construction with particular reference to concrete, masonry, fire resisting construction, and carpentry. Daily, except Sat., 8. White 33.

611. **Working Drawings and Specifications.** Second term. Credit five hours. Prerequisite course 610 and 5 terms of Architectural design. Mr. ———— ————. The development of scale and detail working drawings for a typical building, including discussions of specifications, contracts, etc. Lectures, T Th 8. Criticism by appointment. White 33. A student who has had approximately two years (100 weeks) of experience as an architectural draftsman in an approved office may substitute for this course, equivalent hours in electives.

612. **Heating, Plumbing, and Lighting.** Second term. Credit two hours. Mr. ————. Lectures and exercises, W F 8. White 33.

650. **Planting Design.** Second term. Credit two hours. Mr. EWALD. Th 10–12:30. White B. 6.

651. **Planting Design.** First term. Credit two hours. Mr. EWALD. Th 10–12:30. White B. 6.

COURSES OF THE REGULAR CURRICULA GIVEN OUTSIDE THE COLLEGE OF ARCHITECTURE

MILITARY SCIENCE AND TACTICS, AND PHYSICAL TRAINING

All men in the first two years of undergraduate courses must, in addition to the scholastic requirements for the degree, take three hours a week in the Department of Military Science and Tactics. This department is a unit of the Reserve Officers' Training Corps of the United States Army. The students are organized in an infantry regiment of twelve companies, a regiment of field artillery, two signal corps companies, and a band.

For details of the work in the Department of Military Science and Tactics, see the General Information Number.

All women in the first two years of undergraduate courses, and all men of those two classes who are excused from the military drill, must, in addition to the scholastic requirements for the degree, take three hours a week in the Department of Physical Training.

For details of the work in the Department of Physical Training, see the General Information Number.

HYGIENE AND PREVENTIVE MEDICINE

All students in the first year of undergraduate courses are required to attend lectures on Hygiene and Preventive Medicine given once a week throughout the college year. See Announcement of Courses page 23.

COURSES GIVEN IN THE COLLEGE OF ARTS AND SCIENCES

MATHEMATICS

Mathematics Make-up Permits

Permits must be secured from, and approved by, the Department of Mathematics at least one week before the date scheduled for the make-up examination.

2. **Advanced Algebra.** Repeated in second term. Credit three hours. M W F 9, T Th S 9.

3. **Plane Trigonometry.** Repeated in second term. Credit three hours. First term, M W F 10; second term, T Th S 10.

8. **Analytic Geometry and Calculus.** Throughout the year. Credit three hours a term. Prerequisite, Mathematics 1, 2, 3, or the equivalent. Primarily for students in the College of Architecture. M W F 8, T Th S 8.

ENGLISH

1. **Elementary Composition and Literature.** Throughout the year. Credit three hours a term. Messrs. BALDWIN, ADAMS, BISSELL, ELSON, GIDDINGS, HARRIS, MULLER, TENNEY, and WENTWORTH. M W F 8, 9, 10, 11, 12; T Th S 8, 9, 11. Rooms to be announced.

This course is open to upperclassmen in Agriculture, Architecture, Chemistry, and Home Economics who have satisfied the entrance requirements in English. A study of composition in connection with the reading of representative works in English literature. Students who have not taken the course in the first term may enter in the second term.

Students who elect English 1 must apply at Roberts 292 on Monday, Tuesday, or Wednesday, of registration week for assignment to sections. Registration in the course is in charge of Mr. BALDWIN.

PHYSICS

3. **Introductory Experimental Physics.** First term. Credit three hours. Lectures, Assistant Professor HOWE. Laboratory, Messrs. MANN, TRAWICK, and ————. One two-hour period a week, to be arranged.

Demonstration lectures and laboratory work covering properties of matter, sound and light.

Courses 3 and 4 form a continuous first course. Course 4 may be taken before course 3 if this sequence is preferred.

4. **Introductory Experimental Physics.** Second term. Credit three hours. Lectures, Professor MERRITT. Laboratory, staff, as for course 3. One two-hour period a week to be arranged.

Demonstration lectures and laboratory work covering heat, magnetism, and electricity.

CHEMISTRY

101. **Introductory Inorganic Chemistry.** Lectures. Repeated in the second term. Credit three hours. Professor BROWNE and Assistant Professor LAUBENGAYER.

Examinations for those who were unavoidably absent from the final examination in courses 101 and 105 will be held at 2 p. m. on the day before instruction begins in the fall.

105. **Introductory Inorganic Chemistry.** Recitations and laboratory practice. Repeated in the second term. Credit three hours. Recitations, one hour a week, to be arranged. Professor BROWNE, Assistant Professor LAUBENGAYER, and assistants.

Chemistry 101 and 105 must be taken simultaneously unless permission is obtained by the student from the Dean of his college and from the Department of Chemistry to take either course alone.

GEOLOGY

100. **Introductory Geology.** Repeated in the second term. Credit three hours. Professor RIES, Dr. BURFOOT, Mr. MEGATHLIN, and Mr. CONANT. Lectures and laboratory. First term lectures, T Th 11. Second term lectures, T Th 9.

Students must register for laboratory assignment at Geological Laboratory, McGraw, before the beginning of the course. The fundamental principles of this branch of science. The inorganic aspects of the subject are emphasized more than the organic.

COURSE GIVEN IN THE MEDICAL COLLEGE

24. **Anatomy for Artists.** Throughout the year. Credit three hours a term. Professor KERR. A study of the bones, muscles and other structure that affect the surface form and posture. One lecture and one or two drawing periods a week; hours to be arranged. Given in alternate years. Will not be given in 1932–33.

COURSES GIVEN IN THE COLLEGE OF AGRICULTURE

8. **Advanced Woody Plant Materials.** Second and first terms. Credit three hours a term. Intended for advanced and graduate students. Registration by permission of the department. Lecture, F 12. Laboratory and field trips, M and either W or F 1:40–4. Room 29, Plant Science Building. Professor R. W. CURTIS and Mr. WYMAN.

A study of the trees, shrubs, and vines used in landscape planting and in nursery work. All members of the class will be required to participate in two excursions to the Rochester parks, one in each term. Transportation charge for each trip will be $5. Laboratory fee, $4.

SUMMER SESSION, 1932

S 6. **Garden Flowers.** Credit two hours. Lectures, M T Th 9; F 12. Laboratory, W F 1:40–4:30. Room 15, Plant Science Building and Greenhouse. Miss MINNS. Laboratory fee, $2.

This course, planned primarily for graduate and advanced students in floriculture and ornamental horticulture, comprises a study of herbaceous plant materials. The aim is to give the student such an intimate knowledge of these forms of plants as may be used in garden planting, either on home grounds, rural social centers, or public parks, more particularly with reference to summer conditions. Students must have had sufficient botany to be familiar with the botanical characters and classification. An excellent collection of plant material is available for demonstrations. All members of the class will participate in an excursion to the Thompson Estate at Canandaigua on August 12 and 13.

S 8. **Woody Plant Materials for Landscape Planting.** Credit four hours. Lectures, M T Th F 8. Laboratory and field trip, M T 10–12:30, W Th 11–1, M T 1:40–4:30. Room 29, Plant Science Building and Campus. Professor CURTIS. Laboratory fee, $3.

A study of the characteristics and requirements of trees, shrubs, and vines for landscape planting. The laboratories and field trips enable the student to recognize common woody plants. The lectures discuss planting areas, planting practices, and plant materials, in order that the student may learn to see plants not only as growing things but as possible units in designs with which he may be able to improve his surroundings. All members of the class must participate in an excursion to Rochester on August 12 and 13 to visit private estates and public parks. The transportation charge will be $5.

COURSES GIVEN IN THE COLLEGE OF ENGINEERING

110. **Elementary Surveying.** Freshmen. Either term as assigned. Credit three hours. Use of steel tape, level and transit; fundamental surveying methods; measurement of lines, angles and differences of elevation; land surveying; areas

and plotting. Recitations, field work, computations, and mapping. Textbook: Breed and Hosmer's *Elementary Surveying*. First term, one recitation and two field or computation periods a week; Second term, three recitations a week for the first six weeks and three field or computation periods a week for the remainder of the term. Professor UNDERWOOD, Assistant Professor LAWRENCE, and others.

225. **Materials of Construction.** Juniors. Credit three hours. The materials studied are: Lime, cement, stone, brick, sand, timber, ores, cast iron, wrought iron, steel, and some of the minor metals and alloys. The chemical and physical properties, uses, methods of manufacture, methods of testing, and unit stresses of each material are considered, particular emphasis being laid on the points of importance to engineers. Three recitations a week. Textbook: Moore's *Materials of Engineering*. Professor SCOFIELD.

226. **Materials Laboratory.** Juniors. Either term. Credit three hours. Prerequisite course Arch. 210 and must be taken with or preceded by C. E. 280. Experimental determination of the properties of materials by mechanical tests. Study of testing machines (their theory, construction, and manipulation); calibration of testing machines and apparatus; commercial tests of iron and steel: tensile, compressive, torsional, shearing, and flexure tests of metal and various woods and stress-strain observations; tests of cement, concrete aggregate, concrete, plain and reinforced, and of road material and paving brick. The course is planned to supplement Course 225 with its study of the properties of materials by the actual handling of the materials and by observations of their behavior under stress. Laboratory work two 2½ hour periods a week. Professor SCOFIELD.

227. **Testing of Materials.** (Laboratory.) First term. Credit one hour. Given especially for students in the College of Architecture. A brief course in laboratory methods comprising tests of beams and columns in steel, wood and concrete. Professor SCOFIELD.

270. **Structural Design and Bridge Stresses.** Juniors. First term. Credit four hours. Prerequisite course Arch. 210.

Structural Design. The recitations cover the graphic analysis of simple beams and roof trusses. The computations and drawings include complete detail designs and working drawings of wooden joints to resist large tensile stresses, and of a wooden roof truss for given specifications. The object of the course is to show how to apply the principles of mechanics to the design of every detail of the simple structures named, and to study the forms and strength of joints and fastenings used in heavy timber framing. The computations required are to be arranged in systematic order in the form of reports. Textbook: Jacoby and Davis's *Timber Design and Construction*. Computation and drawing, two-and-one-half hours a week.

Bridge Stresses. Stresses due to dead, live and wind loads, initial tension, and impact; panel loads and locomotive axle loads; determination of the position of live loading for greatest stresses; maximum and minimum stresses; analytic and graphic methods are used. The principal types of simple trusses employed in modern construction are considered, in several cases both with and without counterbalancing. The solution of many numerical examples taken from practice forms a prominent part of the class work. Three recitations a week. Textbook: Urquhart & O'Rourke's *Stresses in Simple Structures*. Professor URQUHART, Assistant Professors BURROWS and O'ROURKE, and Messrs. CHAWNER and PFISTERER.

271. **Structural Design.** Juniors. Second term. Credit three hours. Prerequisite course C. E. 270. An elementary course in Steel Design. Complete design, detail drawing, bill of material and estimate of weight of a steel roof truss and of a through railroad plate girder bridge. Textbook: Urquhart and O'Rourke's *Design of Steel Structures*. Three computation and drawing periods a week. Professor URQUHART, Assistant Professors BURROWS and O'ROURKE, and Mr. PFISTERER.

273. **Steel Buildings.** Elective. Seniors and graduates. First term. Credit three hours. Prerequisite courses, Arch. 210 and C. E. 271. This course com-

prises the design of the steel framework for building of the prevailing type used in power house or shop construction. Dead, snow, and wind stress diagrams are drawn for the roof trusses. Provision is made for an electric crane moving the full length of the building and the stresses in the framework due to the movement of the crane are determined. The effect of the wind and the eccentric load due to the crane girder are considered in the design of the columns. Textbook: Ketcham's *Steel Mill Buildings*. Report and drawings. Three two-hour periods a week. Assistant Professor BURROWS.

280. **Concrete Construction.** Juniors. Either term. Credit three hours. Prerequisite courses, Arch. 210 and 211. Concrete materials, properties of plain concrete, its making and deposition; elementary theory of reinforced concrete as applied to columns, rectangular beams and slabs; T-beams and beams reinforced for compression; direct stress combined with flexure. Three two-hour periods a week. Textbook: Urquhart and O'Rourke's *Design of Concrete Structures*. Professor URQUHART, Assistant Professor O'ROURKE, and Messrs. CHAWNER and PFISTERER.

282. **Reinforced Concrete Building Design.** Elective. Seniors and graduates. Either term. Credit three hours. Prerequisite course C. E. 280. Design of a reinforced concrete flat-slab building and investigation of various other types of floor systems for commercial buildings. Complete detail design for one building, including stairway, elevator shafts, penthouses, etc. Working drawings and steel schedules. Seven and one-half hours a week. Textbook: Urquhart and O'Rourke's *Design of Concrete Structures*. Professor URQUHART and Assistant Professor O'ROURKE.

285. **Reinforced Concrete Design.** Elective. Seniors and graduates. Either term. Credit three hours. Prerequisite course C. E. 280. Theory and design of gravity, cantilever, and counterfort retaining walls. Design of footings: single and multiple column of reinforced concrete, I-beam grillages. Design of bins and tanks: subsurface and supported on towers. Reports and sketches. Three two-hour periods a week. Professor URQUHART and Assistant Professor O'ROURKE.

296. **Earthwork Computations.** Second term. Credit two hours. Prerequisite, course 110. Topographic surveying; stadia measurements; transit and stadia methods; plane table; profile leveling, cross-sectioning. Methods of field work and computations necessary for the determination of quantities of earthwork involved in grading, road building, drainage ditches, etc. Recitations and field work. Textbooks: Breed and Hosmer's *Elementary Surveying*, Vol I, and Higher Surveying, Vol. II. M W 1:40–4:00. Assistant Professor LAWRENCE.

HYGIENE AND PREVENTIVE MEDICINE

1. **Hygiene.** First term. Required of all Freshmen. One lecture recitation each week with preliminary examination and final. The use of a textbook will be required.

Registration and assignment to section: Men, Old Armory; Women, Sage Gymnasium.

Sections for men: Monday 9, 10, 11, 12; Tuesday 9, 11, 12; Wednesday 8, 9, 10, 11, 12; Thursday 8, 9, 11, 12; Friday, 8, 11; Saturday 8, 9, 10, 12.

Sections for women: Monday 8; Tuesday 8, 10; Wednesday 2; Thursday 10, 2; Friday 9, 2; Saturday 11.

2. **Hygiene.** Second term. Required of all Freshmen. One lecture recitation each week with preliminary examination and final. The use of a textbook will be required.

Registration and assignment to section: Men, Old Armory; Women, Sage Gymnasium.

Sections for men: Monday 9, 11, 12; Tuesday 9, 11, 12; Wednesday 8, 9, 11, 12; Thursday 9, 11, 12; Friday 8, 10, 11, 12; Saturday 8, 9, 10, 12.

Sections for women: Monday 8; Tuesday 8, 10; Wednesday 2; Thursday 10, 2; Friday 9, 3; Saturday 11.